FALMOUTH
UNIVERSITY

COMPUTING FOR GAMES AT FALMOUTH

WELCOME TO BSC(HONS) COMPUTING FOR GAMES AT FALMOUTH.

I would like to welcome you to our growing game development community here at the Falmouth University Games Academy.

All of us on the Games Academy Course Team and the Meta-Makers Research Institute look forward to working with you.

This is the beginning of an exciting new course and your journey to become a successful computing professional in the games industry. We have worked with games industry veterans and professionals, pioneering games educators, and world-leading researchers, to prepare a rigorous and comprehensive curriculum for you. The course is tailored to maximise your employability; whether this is as an entrepreneurial indie game developer, a consultant specialising in a field of digital games technology, or as a professional programmer working in an established game development studio.

A preliminary course schedule is available for you to view online:
https://docs.google.com/spreadsheets/d/1zMDxvj-DzZ3xzEEWksPgqJlR-Z66nslAi7fYkhM8pJE/edit#gid=0

Your offer

If you have a conditional offer, your place is subject to meeting those conditions. This means we're waiting to receive your results or some more information before your place can be finalised. You can see these conditions using UCAS Track https://track.ucas.com

If you need to ask us anything about your offer, get in touch with our Admissions team on 01326 213730, use Live Chat on our website or email admissions@falmouth.ac.uk.

First week of term

Your first day of attendance will be **Monday 18 September 2017.** You will meet with the Games Academy Course Team at **10am** in **Lecture Theatre A** in the **Daphne Du Maurier** building on the **Penryn Campus** for your welcome talk.

This is the week when you'll meet your course mates, course tutors and the university staff. There will be important inductions for both the course and the wider university, in addition to a number of social activities. You will also be given course outlines and timetables.

Between the course team, the University and the Student's Union, we have a full and exciting first week planned out for you all, which we will explain at this meeting. In addition to attending talks about what it will be like being a Falmouth University student, you will be expected to attend networking activities to meet your fellow new students, as well as existing students within the Games Academy. Community and teamwork are central to our ethos and our studio-driven approach to practice.

You can download a copy of the Penryn Campus map or the Falmouth Campus map from the Contact page of our website here.

MyTimetable

https://mytimetable.falmouth.ac.uk/ available from 14 September 2017

This is the link to MyTimetable, your online academic calendar which shows all scheduled learning activities and your course timetable. It will be available from 14 September 2017, however, timetables can be subject to change. To keep up to date, we recommend that you export the feed to your chosen device (mobile, tablet, laptop or desktop). An induction will be offered on the use of MyTimetable during Freshers 2017. Students have access to their individual student timetables, once they have completed their online enrolment and IT induction.

Pre-course preparation

Project

Essential

The course will primarily focus on developing your practical C++ programming skills, as well as computing and game-making knowledge, across the three years of the degree. However, we will initially introduce the principles of computing to you using Python. This will ensure that everyone, including beginners with little to no prior programming experience, is afforded the opportunity to develop a firm understanding of computing before exploring the richer and more complex programming constructs available in C++ after Christmas.
If you have never used Python 3 before, you must familiarise yourself with the language using the PyCharm IDE and online tutorials. Experiment by writing some simple programs and, if you are feeling ambitious, try making your own game using PyGame!

To help you get started, some free online resources are listed below:

Python:	https://www.python.org/downloads/release/python-343/
Tutorials:	https://docs.python.org/3/tutorial/index.html
IDE:	https://www.jetbrains.com/pycharm/
PyGame:	http://www.pygame.org/hifi.html

If you have never used C++ before, please start to familiarise yourself with C++14 and SDL2. Windows users should download and set-up Visual Studio, while Mac users should download and set-up Xcode, both of which are available free online:

Visual Studio:	https://www.visualstudio.com
Xcode:	https://developer.apple.com/xcode/

For your convenience, some free online tutorials can be found here:

C++:	http://www.learncpp.com
SDL:	http://lazyfoo.net/tutorials/SDL/index.php

You will also have the opportunity to use Unreal Engine 4 during your collaborative game development projects with students on other courses within the Games Academy. We recommend that you familiarise yourself with the engine by downloading it and completing the quick start guide:

Unreal 4:	https://www.unrealengine.com/download

Quick Start: https://docs.unrealengine.com/latest/INT/Programming/QuickStart/index.html

Please do not worry if you have not done A-level Mathematics and/or Computing! We will be covering all of the mathematical and computing knowledge that you will need to know; specifically tailoring the topics to emphasise those most important to games development. However, we recommend that you familiarise yourself with basic computing and mathematics topics if you have not studied these for a number of years. To this end, the following YouTube channels may prove helpful:

Game Math: https://www.youtube.com/playlist?list=PLW3Zl3wyJwWOpdhYedlD-yCB7WQoHf-My
Computerphile: https://www.youtube.com/user/Computerphile
Numberphile: https://www.youtube.com/user/numberphile

Reading

Essential

We insist that you engage with the following books, although we do not expect you to finish reading through them before you arrive:

Spraul, V.A., 2012. *Think like a programmer: an introduction to creative problem solving.* No Starch Press, San Francisco, CA. RRP £20. Available Free Online.

Stroustrup, B., 2014. *Programming: principles and practice using C++.* Addison Wesley, Boston, MA. RRP £38. Available cheaper on Amazon Kindle.

Matrin, R.C., 2008. *Clean code: a handbook of agile software craftsmanship.* Prentice-Hall, Boston, MA. RRP £20. Available on free trial with Safari Books.

Dunn, F. & Parberry, I., 2011. *3D math primer for graphics and game development*, 2nd Edition. CRC Press. RRP £53.

Strunk, J.R. & White, E.B., 2017. *The elements of style, Classic Edition.* Longman, London. UK. RRP £6. Available cheaper with Amazon Kindle.

Electronic copies will be significantly cheaper than hard-copies. Some have been released online by authors as free PDF documents. As such, the cost of book purchases should not exceed £100 and can be significantly less.

Tuition fees (per year)

2017-18 full-time UK/EU: £9,250
2017-18 full-time International: £15,000

During your course

Materials and equipment list and costs

Essential

You must reserve a budget of at least £40 to purchase additional materials and electronic components for your COMP140 game controller project.

All students enrolled on BSc(Hons) Computing for Games should have access to their own private computer. Any machine capable of running current games at medium or high settings will be sufficient. Below is guidance from our studio technician, along with some example computer specifications, costing between £600 and £1556.

Computer buying advice

Firstly, a couple of caveats:

1. It is possible to develop games on most computer systems that have been made in the last ten years. Furthermore, high-spec game development workstations, electronic components and bread boards, and new technologies such as VR Headsets, are already available within the Game Studios on an as-needed basis for your coursework tasks. Therefore, there is no requirement for any student to bring an expensive computer system or specialist equipment with them when they join the course.
2. However, we anticipate that some students will want to purchase a new computer to see them through university and would appreciate some advice on this matter from a game developer's perspective.
3. Please note, that although every effort has been made to ensure the described computer systems are appropriately configured, these systems have not been tested by any member of the course team, and the University can accept no liability for the consequences of any actions taken on the basis of the information provided. If you are unsure about any aspect of your purchase, then please contact the retailer.

Graphics card

Arguably, the most important hardware consideration for a game development system is the graphics card, especially if you intend to work with detailed 3D graphics that are rendered in real-time. For the sample computers listed below we have highlighted in *italics* the corresponding 'average G3D benchmark' scores as taken from http://videocardbenchmark.net/ at the time of writing. This website considers "high end video cards" to have a score of 930 or above.

Laptop or desktop?

Laptops obviously have the advantage of being portable. You will typically get a higher spec system when spending an equivalent amount on a desktop, instead of a laptop. Desktops also tend to have better air-flow and cooling, so less stress is put on the components when running for long periods, which can in turn help to improve the life span of the system.

Hard drive

Depending on whether your preference is for fast load times or extra storage space for digital downloads, films, music, and so on, you might want to consider either a SSD hard drive (speed) or a larger 'regular' hard drive (storage). Some developers like to use an internal SSD hard drive for system speed and also have a larger external/portable hard drive for storing or transferring other documents.

Many larger gaming laptops have space for an SSD for storing the operating system and installed applications, and a larger hard drive for storing other files. This is also a common configuration for desktops, and generally offers the best compromise between speed and affordability.

Display size

When working with game development tools you will often be running multiple programs which each have numerous smaller views and panels. You will quickly realise the benefit of having a lot

of ‘screen estate’; the more pixels the better. With laptops this can represent a trade-off between portability and weight, versus usable display area. Whether you use a laptop or a desktop it’s certainly worth considering a full HD display (1920 x 1080 resolution) and perhaps a secondary monitor also.

Example computers

We have tried to cover a range of options and budgets, but the list is by no means exhaustive; we advise that you shop around a little and pick something that you’re comfortable with.

Basic-spec gaming PC

https://www.pcspecialist.co.uk/computers/intel-home-office-pc/
Configured with the following add-ons:

- Graphics card: Nvidia Geforce 1050 Ti 4GB.
- RAM: 8GB DDR4
- Monitor: AOC 21.5” E2270SWDN Monitor 1920x1080.

Total Cost: £713inc vat.

High-spec gaming PC

The Vortex 1250 gaming PC: http://www.pcspecialist.co.uk/view/Vortex-1250-gaming-pc/
Configured with the following add-ons:

- Graphics card: Nvidia GTX 1070.
- Monitor 1: IIYAMA E228HS 22”.
- Monitor 2: IIYAMA E228HS 22”.

Total Cost: £1556 inc vat.

Basic-Spec gaming laptop

MSI GL62 7QF Gaming Laptop: http://www.ebuyer.com/770451-msi-gl62-7qf-gaming-laptop-9s7-16j562-1672

Total Cost: £600 inc vat.

High-spec gaming laptop

MSI GE72 7RE Gaming Laptop: http://www.ebuyer.com/770994-msi-ge72-7re-apache-pro-gaming-laptop-9s7-179941-011

Total Cost: £1250 inc vat.

If you have not done so yet, please join us on our Facebook page and leave a message so that I can invite you to our private groups on Slack and GitHub. This will help us to get to know each other.

Facebook Page: https://www.facebook.com/computingforgames/
Facebook Group: https://www.facebook.com/groups/computing.for.games/
Slack: https://falmouthgamesacademy.slack.com
GitHub: https://github.com/Falmouth-Games-Academy/

Enrolment and Student Terms & Conditions

You'll get an email two weeks before the start of term telling you how to enrol online. You'll need to enrol before the first day of term to officially register as a student of Falmouth University and receive an undergraduate student loan.

When you enrol, you'll need to agree to and comply with the University's Student Terms & Conditions. These Terms & Conditions are important and we encourage you to read them carefully, before enrolling. You can find them under 'Student Terms & Conditions' on our website.

Over the next few weeks we'll email you more important information about your course and life at Falmouth. If you're going to be away or out of contact, make sure you ask someone to check your emails and reply on your behalf.

We know all of this can seem overwhelming and preparing for your course can involve a lot. So we're here to help. If you have any questions at all, just get in touch with Admissions on 01326 213730, use Live Chat on our website or email admissions@falmouth.ac.uk.

Finally, we wish you an enjoyable and creative time before the course starts and we're looking forward to welcoming you to Falmouth in September.

Yours sincerely

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